REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-5 are pending in the application. Independent Claims 1-3 are amended by the present amendment. Support for amended independent Claims 1-3 can be found in the original specification, claims and drawings.[1] No new matter is presented.

In the outstanding Official Action, the figures were objected to; Claims 4 and 5 were rejected on the ground of nonstatutory obviousness-type double patenting as unpatentable over Claims 4 and 5 of U.S. Patent Application 2004/0058666 in view of Gosselin (WO 01/65885); Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gosselin in view of Beckmann et al. (U.S. PG Pub. 2003/0022683, hereinafter "Beckmann") and further in view of Shimanuki (JP 10290190); Claim 3 was rejected under 35 U.S.C. § 103(a) as unpatentable over Gosselin in view of Beckmann; and Claims 4 and 5 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gosselin in view of Beckmann and further in view of Jellema et al. (U.S. Patent No. 6,707,900, hereinafter "Jellema").

The Official Action objected to Figures 1 and 2 because the figures are not designated as "Prior Art." In response, Figures 1 and 2 are amended to include such a designation. Accordingly, Applicants respectfully request that the objection to these drawings be withdrawn.

Regarding the rejection of Claims 4 and 5 on the grounds of nonstatutory obviousness-type double patenting over Claims 4 and 5 of U.S. Patent Application 10/663,701, in view of Gosselin, Applicants submit herewith a Terminal Disclaimer against Patent Application 10/663,701.

[1] e.g., specification, p. 5, lines 9-13.

Accordingly, Applicants respectfully request that the rejection of Claims 4 and 5 on the grounds of nonstatutory obviousness-type double patenting be withdrawn.

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gosselin in view of Beckmann and in further view of Shimanuki. In response to this rejection, Applicants respectfully submit that amended independent Claims 1 and 2 state novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 1 recites a radio communication system having a radio network controller, base stations and mobile stations, to perform multicast communication, wherein

> the radio network controller comprises ***a control signal transmitter configured to divide a multicast group into subgroups of mobile stations, to divide a control signal for the multicast group into control signals for the subgroups, and to transmit the control signals for the subgroups to the base station***; and
>
> the mobile station comprises:
>
> a response signal creator configured to create a response signal to the control signal for at least one subgroup;
>
> a transmission timing detector configured to detect a transmission timing of the response signal from the control signal for at least one subgroup; and
>
> a response signal transmitter configured to transmit the response signal to the base station with the transmission timing.

As discussed in the background portion of the specification, a conventional radio network controller (RNC) in a multicast system sends out a control signal to the entire multicast group during a multicast session. The transmission of a single control to the entire group causes all of the mobile stations participating in a multicast group to respond simultaneously placing a great burden on the RNC to handle all of the responses from the mobile stations.

The present inventors recognized this shortcoming and arrived at a system by which the RNC divides the multicast group into subgroups of mobile stations, with corresponding separate control signals. These divided control signals each identify a specific time during

which their corresponding subgroup is to send a response to the RNC; the time specified for each subgroup is different. Thus, the RNC receives the responses in a staggered manner and is able to more easily process the received messages, since they do not arrive at the RNC at the same time.

Amended independent Claims 2 and 3, while directed to alternative embodiments, recite the above-noted feature of dividing a control signal for an entire multicast group into separate subgroup control channels. Therefore, the remarks presented below are applicable to Claims 2 and 3, as well as independent Claim 1.

Turning to the applied references, Gosselin describes a method for limiting signaling traffic sent from the RNC to the base stations in a wireless communication network during multicast communications. In addressing the features directed to dividing the control signal sent from the RNC to the multicast subgroups, as recited in independent Claim 1, the outstanding Official Action relies on p. 3, line 30 through p. 4, line 29 and Fig. 1 of Gosselin.

The cited portion of Gosselin describes the benefits of reducing signaling traffic communicated from a mobile switching center to a plurality of base stations by assigning a multicast address to each multicast group for use in subsequent multicast communications. Each base station then receives a single multicast transmission from the RNC addressed to the multicast address and forwards this transmission to each of the mobile stations participating in the multicast group. Thus, Gosselin describes a method for reducing the amount of downstream traffic transmitted from the RNC to each base station during multicast communications.

In contrast, amended independent Claim 1 recites that the RNC divides a multicast group into subgroups of mobile stations and that the control signal for the multicast group is divided for the subgroups and transmitted to the base stations. Thus, a plurality of subgroups of mobile stations is generated from a single multicast group, and a control signal sent for the

multicast communication is divided into separate control signals for each subgroups of mobile stations.

In contrast, Gosselin fails to teach or suggest dividing a multicast group into subgroups of mobile stations or dividing a control signal for the multicast group into control signals for each subgroup, whatsoever. Instead, Gosselin describes assigning a single address for the entire multicast group which is used by each respective base station to receive and subsequently forward messages. Thus, Gosselin does not teach or suggest dividing the control signal for the multicast group to control the timing of responses received at the RNC, but instead assigns an address to the multicast group to limit traffic sent from the RNC to the base stations.

Therefore, Gosselin fails to teach or suggest a radio network controlling comprising ***a control signal transmitter configured to divide a multicast group into subgroups of mobile stations, to divide a control signal for the multicast group into control signals for the subgroups and transmitting the control signals for the subgroups to the base station***, as recited in amended independent Claim 1.

Beckmann, the secondary reference, describes a method of multicast communication. Before a multicast message is transmitted from the RNC, a resource assignment is transmitted to a mobile station and a connection to the base station is configured accordingly. In addressing the above-noted features directed to the RNC, as recited in independent Claim 1, the outstanding Official Action relies on paragraphs [0007-0013] of Beckmann.

The cited portion of Beckmann describes that the base station transmits a message for assigning resources which includes information for configuring a common transport channel and a common physical channel. Once the receiver registers for the multicast group at the base station, the receiver is informed of the identifier for the respective multicast group from the base station. The base station is then configured to forward multicast messages to the

requesting mobile station which has decided to join the multicast group. Thus, Beckmann describes a method for a mobile device to register at a base station to receive multicast communications, and to setup resources to do so.

Beckmann, however, fails to teach or suggest an RNC configured to divide the multicast group into subgroups of mobile stations and divide a control signal for the multicast group into control signals for the subgroup, as recited in amended independent Claim 1. As noted above, Beckmann describes a method to allow specific mobile devices to join a multicast group and thereby become part of the multicast group.

Therefore, Beckmann also fails to teach or suggest an RNC comprising ***a control signal transmitter configured to divide a multicast group into subgroups of mobile stations, to divide a control signal for the multicast group into control signals for the subgroups, and to transmit the control signals for the subgroups to the base station***, as recited in amended independent Claim 1.

Further, Shimanuki is relied upon only to address the feature of a mobile station having a transmission timing detector, and fails to teach or suggest any of the features related to the RNC, as recited in amended independent Claim 1.

Specifically, Shimanuki describes a mobile communication system including a transmitter-receiver (20) between a public bases station (10) and a slave set (30). The slave set (30) transmits transmission timing information STT to the transmitter-receiver (20) with the transmission timing of the protocol signal transmitted to the public base station (10). The transmitter-receiver (20) detects the transmission timing of the slave set (30), and switches the transmitter/receiver route between the public base station (10) and the slave set (30) in accordance with the detection result.[2]

[2] Shimanuki, Figs 1-2 and ¶[0026-0030].

Thus, even assuming "the slave set 30 and the transmitter-receiver 20" in Shimanuki corresponds to the "mobile station" in the present invention. Shimanuki merely describes that the transmitter-receiver (20) detects the transmission timing created by the slave set (30), and fails to teach or suggest the features of "***detecting a transmission timing of the response signal from the control signal transmitted from the radio network controller for at least one subgroup***", as recited in independent Claim 1.

Accordingly, Applicants respectfully request that the rejection of Claims 1-3 under 35 U.S.C. § 103 be withdrawn.

Claims 4 and 5 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gosselin in view of Beckmann and in further view of Jellema. As discussed above, neither Gosselin nor Beckmann, alone or in combination, teach or suggest the above-noted features recited in amended independent Claims 1-3. Likewise, Jellema does not remedy these deficiencies, and therefore none of the cited references teach or suggest Applicants' Claims 4 and 5 which include the above-distinguished limitations by virtue of dependency. Therefore, the applied references fail to provide a *prima facie* case of obviousness with regard to any of these claims.

Accordingly, Applicants respectfully request the rejection of Claims 4 and 5 under 35 U.S.C. § 103 be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-5 is definite and patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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